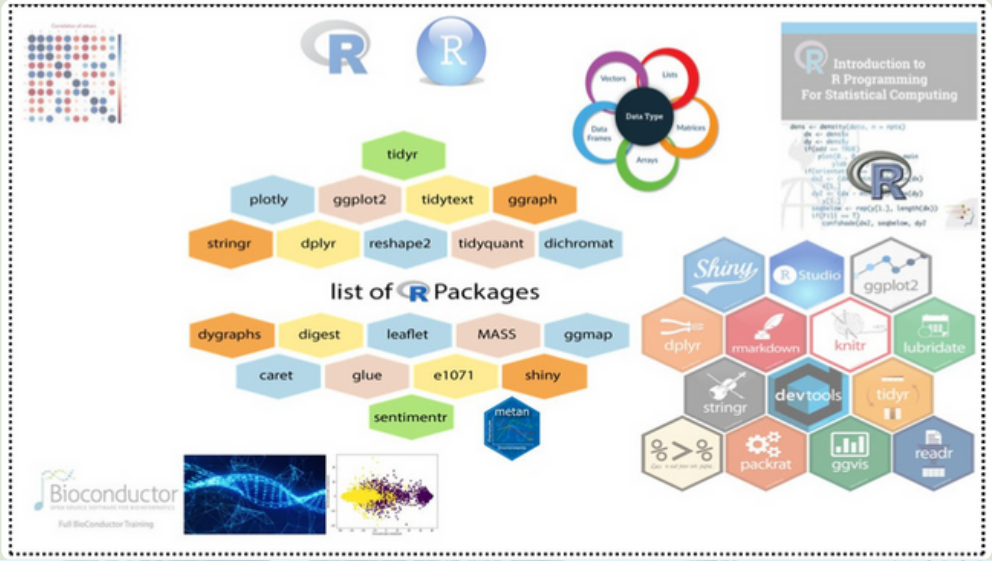
Training on

R for Biological Data Analysis

08-12 January 2024

R has become the standard for statistical computation among Scientists and this training will give you a solid foundation in creating statistical analysis solutions using the R for biological data, data visualization, bioinformatics and big data analytics



Course Director	**Dr. J. Sreekumar**
Course Coordinators	**Dr. K.M. Senthilkumar** **Dr. P. Prakash** **Dr. Visalakshi Chandra**

Organized by

Section of Extension and Social Sciences
ICAR-Central Tuber Crops Research Institute Sreekariyam,
Thiruvananthapuram-695017, Kerala

About ICAR-CTCRI

The ICAR-Central Tuber Crops Research Institute (CTCRI), a constituent institute under the Indian Council of Agricultural Research was established in 1963 and has a Regional Station at Bhubaneswar, Odisha. All India Coordinated Research Project on Tuber Crops (AICRP-TC) functioning at CTCRI headquarters at Thiruvananthapuram, Kerala takes care of the research, development and extension of tropical tuber crops of the 18 States and one Union Territory (Andaman and Nicobar islands) of India. CTCRI is the only research organization in the world dedicated solely to research on tropical tuber crops, which includes major tuber crops like cassava, sweet potato, yams, aroids (elephant foot yam, taro and tannia) and minor tuber crops like Chinese potato, arrowroot and yam bean. These crops constitute one of the most important staple foods for the people in the developing world besides their versatile uses in feed and industrial sectors. This year, the Institute is celebrating its Diamond Jubilee and 60 years of concerted research have led to the development of several sustainable production, protection and processing technologies for these crops, besides the release of 71 improved varieties. The agri-business incubator and techno-incubation centre at headquarters and regional station are involved in promoting entrepreneurship among the farmers and other stakeholders.

About the Section

The section of Extension and Social Sciences is involved in TOT Programmes, Farmers and other Stakeholders interaction, Frontline Demonstrations for validation and improvement on, released technologies, impact analysis of released technologies, developing ICT tools, developing crop growth models, application of IoT devices and development of AI tools for crop management, developing statistical and bioinformatics tools, databases and AI in genomics. The section has developed R packages for bioinformatics sequence analysis and is accepted in CRAN. A web application AgriAnalyticsR using R Shinny is developed which can be accessed using https://sreejyothi.shinyapps.io/agrianalyticsr/. for basic statistical data analysis.

About the training

This training program aims to equip participants with the skills and knowledge required for proficient biological data analysis using the R programming language. R is a powerful and widely used statistical programming language in the field of statistics and bioinformatics, providing a robust platform for data manipulation, visualization, and statistical analysis. This training will cover essential concepts, tools, and techniques for analyzing biological data, empowering participants to draw meaningful insights and make informed decisions. This training will also cover the steps in development of your own R packages, web-based application development using R and its deployment.

By the end of this training, participants will have a solid understanding of the R programming language and its application to basic biological data analysis tasks. They will be equipped with the skills to import, clean, analyze, and visualize biological data, setting the stage for further exploration and specialization in bioinformatics and computational biology.

Course Content

- Introduction to Statistical Analysis
- Introduction to R software for statistical computing
- R Studio
- Explanatory Data Analysis (EDA) in R
- Data Visualization using R
- Mean Comparison Tests
- ANOVA and multiple comparison
- Tests of Association in R
- Multivariate analysis: Principal Component Analysis, Cluster analysis
- Predictive regression models
- Machine learning in biology using R
- Multi environmental trial data analysis
- Population genetics analysis using R
- R and Bioconductor for Bioinformatics
- R shiny and development of web-based application using R
- Development of R package using shiny

Duration

Duration of the course is five days from 8-12 January 2024. The out station participants are expected to arrive latest by the evening of 7 January 2024. The participants are advised to schedule their return journey only after 5.00 PM on 12 January 2024.

Eligibility

Participant should be from ICAR Institutes/ SAUs/ CAU/ Deemed to be Universities/ Colleges/ KVKs, State Departments of Agriculture/ Horticulture, Entrepreneurs etc. Maximum intake of participants to this training programme will be limited to 25 and will be selected by a screening committee. Interested participants may send their application in the prescribed format by e mail on or before the last date 2nd January 2024 with the details of the training fee remitted through NEFT transfer.

Training fee

Rs.5000/- plus 18% GST amounting to Rs.5900/- per head.

Payments may be made to following account:

Account Name	:	ICAR UNIT-CTCRI
Account No	:	57019705533
Branch	:	SBI, Kallampally
IFSC	:	SBIN0070288

Travel, Food and Accommodation

The lodging and boarding expenses are to be borne by the participants. Guest house accommodation will be provided on payment, subject to the availability and on prior intimation (Rs. 300 to 400 per person per day).

Venue and Location

The programme will be held at ICAR-Central Tuber Crops Research Institute, Sreekariyam, Thiruvananthapuram-695017, Kerala which is about 12 km away from Thiruvananthapuram Central Railway Station/ Air port/ bus terminal, and well connected with bus/ pre-paid auto facility.

Dates to Remember

Last date of submission of application. : **2 January, 2024**

Date of training : **08-12, January, 2024**

APPLICATION FORM

Name :

Designation & Office address :

Gender :

Postal address (In capital letters) :

Date of birth and age :

Nationality

Educational qualifications :

Experience :

Mobile number :

Email ID :

Whether accommodation is required at ICAR-CTCRI (Yes/No):

Payment details

Mode of payment : Online

Transaction ID :

Bank details :

Date of transaction :

Amount : ₹

Date:

Place:

Signature of the applicant

Contact

Director

ICAR-CTCRI (0471-2598431)

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